Green vs Blue

Green data fields are continuous and blue data fields are discrete. Tableau behaves differently depending on which of these different types of fields are used in a view. I’m not going to go into too much detail because there is already a great article here that explains these differences really well, but it’s worth mentioning again that blues will give headers, categorical colours and multi-select filters while greens will give axes, gradient colours and range filters. It’s so fundamental to the way Tableau draws stuff on the screen, if you don’t understand what these differences are then I encourage you to read the article thrice before returning!

Partitioning and Addressing
Table calculations are one of the most powerful tools within Tableau, but they’re also one of the most complex. When I started making use of table calcs, I was mostly guessing what to do to get the right result. By learning some of the theory, particularly what is meant by ‘partitioning’ and ‘addressing’, has helped me understand the what, where, when, why and how of Table calcs.

Tableau’s manual says:

“The addressing fields define what part of the table you are computing along. The partitioning fields define how to group the calculation”

To me, I don’t find that statement all that helpful. Let’s try and reword it into plain English where we can apply it to a table calculation we are working with in Tableau. If the partitioning fields “group the calculation” we could start by saying ‘per customer’ or ‘per product’ or ‘per ship mode & container combination’ etc.

The addressing fields are those used within the calculation you are doing, so we could continue by saying ‘calculate % of total for each region’ or ‘calculate the difference for each category’. Put these two statements together and we get something that resembles a plain English sentence.

In the example above we get “For each Region, calculate the Percent of Total for every Category”. For me, reading aloud in my head like this helps me know how to set up my table calc.

Note: When using the ‘Compute using >’ menu shortcut, this will set whatever you
select into the addressing (“for every”) box, and every other dimension used in the view to the partitioning box.

Get lots more info on how to make Table calculations work for you right here and here.

**Tableau writes a query language as you drag and drop**

Tableau is pretty clever software and incorporates all kinds of breakthrough technologies that allows you to quickly create complex visuals from huge data sets using a simple drag and drop interface. But at its heart, Tableau is talking to your data using a form of SQL, and then shapes the results from your data source onto the screen through an ‘interpreter’. Having an appreciation of what’s happening under the hood helps you to drive her in the most efficient and elegant way. Put a dimension on rows and a measure on label and you’ve written a query along the lines of

```sql
SELECT Region, Sum(Sales) FROM Orders GROUP BY Region
```

Put another dimension on the filter shelf and it adds a WHERE clause. Do some sorting and you get an ORDER BY etc. Why is this important to me? Well, whenever I get stuck and don’t know what fields to use or how to configure them, I ask myself ‘how would I do this without Tableau?’ i.e. what steps would I follow to get the required result in a database or a spreadsheet? Working through such a solution often helps me discover the missing link I need in Tableau.

Of course, if you’re not familiar with databases and SQL then you can still become an expert Tableau user without understanding any of this but if you already have a bit of data analysis background then this can help accelerate your Tableau knowledge. Check out the log.txt file in the My Tableau Repository directory to see what’s going on in the background.

**Order of operations**

When you add fields to your view or to the filter shelf or perform a custom calculation, it appears that all these items are computed simultaneously. In fact, things are done in a certain order in Tableau and knowing this order can help you construct your view so that you get the results you need.

Things are processed in this order:

- Context filters create a temp table in your source
- Top N and/or conditional filters form part of your SELECT statement in the query
- Standard filters are applied as a WHERE clause
- Aggregations are computed
- Table calculations are applied
Table layout and axes are drawn

Anything on the Pages shelf is taken into account

Marks are then drawn

Knowing that a standard filter comes after a top N filter but before a table calculation can help you get out of situations such as you don’t know why your % of total figure is not working

**Use of the INDEX function (and it's close relatives)**

Although I had looked through all the available functions early on in my quest to become an accomplished Tableau user, and was aware of the functions INDEX, FIRST and LAST, I hadn’t made proper use of them until relatively recently. Now I know what they do, I use them all the time to help accomplish my goals.

INDEX essentially creates a rank, whether that be by the order that your items are display on the screen or by any other measure is entirely flexible and allows you to sort, filter and display your data in ways that are otherwise not possible.

Here are a couple of introductory examples of what you can use these special functions for:

- **Create rankings within different categories**
- **Prevent overlapping text when using a TOTAL or other table calculation**

There you have it. There’s a lot to take in there, but I think my 3 year younger self would have appreciated the tips. How about you, reader? Was there a Tableau ‘Eureka’ moment for you? Please share in the comments below or get in touch at info@theinformationlab.co.uk
8 Comments

1. Dave April 3, 2013

Since top N filter are 2nd in line, and the where clause 3rd (no idea why they did that this way...), is there a way to use the index() function to keep only the top N products on a continuous line chart?

Reply

Fabricio Werneck July 26, 2013

I’ve managed to keep the top N values using this formula for a calculated field as a filter:

```
1 <= index() AND index() <= [Number]
```

which will return True for the values whose index are between 1 and [Number] (inclusive)

Reply

Michael August 11, 2014

They had it in that order because that is the order that it appears in the SQL statement.

Reply

2. Johan April 18, 2013

Very good and helpful article. Who wrote it?

Reply

3. Data Rockstar January 28, 2014

A simple way to summarize the difference between Blue versus Green is a Dimension versus a Measure.
I disagree—you can have a dimension that is continuous or one that is discrete... in other words, you could have blue dimension or a green dimension. Same with measures.

Very interesting things you put out here. Good explanation on green vs. blue.

Please reload the images on your page. I would like to view the content in its entirety. Thanks

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